

Patent claims for US

1. Seroreactive regions on the E1 protein of human papillomavirus (HPV) 16, with the following amino-acid sequences:

- I. NGWFYVEAVVEKKTGDAISDDENENDSDTGEDLVDFIVNDNDYLT
- II. NENDSDTGEDLVDFIVND
- III. MADPAGTNGEEGTGCNGWFYVEAVVEKKTGDAISDDENENDSDTGED  
LVDFIVNDNDYLT
- IV. EDLVDFIVNDNDYLT
- V. EDLVDFIVNDNDYLTQAETETAHALFTAQEAKQH
- VI. NENDSDTGEDLVDFIVNDNDYLTQAETETAHALFTAQEAKQHRDAVQVL  
KRKYL
- VII. GSPLSDIS.

5 2. Seroreactive regions on the E2 protein of human papillomavirus (HPV) 16, with the following amino-acid sequences:

- I. DKILTHYENDS
- II. DKILTHYENDSTDLRDHI
- III. DLRDHIDYWKH
- IV. AIYYKAREMGFKHINHQQVVPTLA
- V. AIYYKAREMGFKHINHQQVVPTLAVSKNKAL
- VI. YYKAREMGFKHINHQQVVPTLAVSKN
- VII. INHQQVVPTLAVSKNKALQAI
- VIII. INHQQVVPTLAVSKNKAL
- IX. TLAVSKNKALQAIELQLTLETIYNSQYSNEKWTLODV
- X. QLTLETIYNSQYSNEKWTLODVSLE
- XI. TLETIYNSQYSNEK
- XII. TSVFSSNEVSSPEII
- XIII. VFSSNEVSSPEIIRQHLANHPAATHTKAVALGTEET
- XIV. EIIRQHLANHPAATHTKAVALGTEETQTTIQRPRSEP

3. A peptide which contains one or more of the sero-reactive regions as claimed in claim 1.

4. A peptide which contains one or more of the sero-reactive regions as claimed in claim 2.
5. A vaccine which contains one or more of the peptides as claimed in claim 3.
6. A vaccine which contains one or more of the peptides as claimed in claim 4.
7. A composition for diagnostic purposes for identifying specific antibodies against HPV 16 E1 or E2 protein, which contains peptides as claimed in claim 3.
8. A composition for diagnostic purposes for identifying specific antibodies against HPV 16 E1 or E2 protein, which contains peptides as claimed in claim 4.
9. A monoclonal antibody which has affinity for the seroreactive regions of claim 1.
10. A monoclonal antibody which has affinity for the seroreactive regions of claim 2.
11. A composition for diagnostic purposes, which contains a monoclonal antibody as claimed in claim 9.
12. A composition for diagnostic purposes, which contains a monoclonal antibody as claimed in claim 10.
13. A composition for diagnostic purposes as claimed in claim 11 for identifying HPV 16 specific E1 or E2 proteins.
14. A composition for diagnostic purposes as claimed in claim 12 for identifying HPV 16 specific E1 or E2 proteins.

15. The use of peptides as claimed in claim 3 for producing vaccine or for compositions for diagnostic purposes.

16. The use of peptides as claimed in claim 4 for producing vaccine or for compositions for diagnostic purposes.